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elsewhere in Europe, that he pointed out the probability of its occurring also in the Permian formation, and requested Dr. Roessler to obtain fuller details with reference to its occurrence. A few days ago Dr. Roessler received an answer to his inquiries from the General Land Office agent in Texas, with more specimens, and the following report, which he sent to me:

"After traversing the cretaceous and carboniferous series northward of Weatherford, Archer Co., Texas, I was agreeably surprised by a grand panorama of the Permian formation. This system is extensively developed in Russia between the Oural Mountains and the River Volga, in the north of England, and in Germany, where it is mined for its treasures of copper, silver, nickel and cobalt ores. It has not heretofore been known to exist in this State, or it had been mistaken for the Triassic system, which is overlying the former to the south-east. Its hills, which have been traced throughout Archer and Wichita Counties, resemble in shape the copper-bearing or gossan-crested upheavals in Ducktown, Tenn., but they are of a different age and composition. They are nearly barren, and, towering above the most beautiful mesquit prairies fringed by the finely-timbered bottoms of the tributaries of Red River, are exceedingly picturesque. The members of the Wichita System, as far as open to ocular inspection by out-crops or cross-cuts, making allowance for climatic differences, correspond closely with the lower strata, discovered at Perm and Mansfeld, but its mineral resources are evidently more promising. Such numerous veins of copper ore have been traced over the summits and sides of the hills, that hardly a hundred and sixty acre tract could be found without ore on the surface. The ore crops out, as, for instance, on the Isbell Douglass Ball, in such quantity and quality that the mere collection of it, without mining, would prove remunerative. It is supposed that those veins are cotemporaneous with injections at different ages of quartz, trap and porphyry. The vein lodes are parallel with the strata, but there is sufficient evidence that they partake of the nature of true veins. Cupriferous and ferruginous cross-courses, feeders and leads of manganese are often met with. A cross-cut was made to a depth of about fifteen feet upon the Isbell lode, and ten hours work resulted in the raising of 6000 pounds of copper ore. This ore is far superior to the ferro-sulphuret of copper, or copper pyrites, which ore is most generally worked in England, and it is, in fact, more profitable than the native copper as found at Lake Superior. It is easily smelted, and the strata in which it is found can also be more economically excavated than any other in which copper ores occur."

Dr. Le Conte, in continuation, spoke of the occurrence of calamite tinged with copper in the Permian formation of Southern Mexico.

Mr. Gabb mentioned the deposits of grey copper near the Colorado River, in Arizona, scattered over the surface, the debris of metallic veins.

Dr. Leidy remarked, that shad had been brought to our markets, for several years past, during the late autumnal months, which were caught in salt water, perhaps in Delaware Bay or off the Jersey coast. When the shad ascend the river to spawn, their stomachs and intestines appear to contain so little that the question is often asked as to the nature of their food. A shad which Dr. L. had purchased a few days since, on examination, was found to have the stomach full of small fishes. There were 30 of them, from 2 to 4 inches long, and all one species, which appears to be the Sand-launce, *Ammodytes Americanus.*

Oct. 27th.

MR. VAUX, Vice-President, in the Chair.

Twenty-six members present.

Philip S. Wales, M. D., was elected a member.

The following gentlemen were elected correspondents: L. E. Latemer, M. D., of New York; A. A. Breneman, of Lancaster; H. Evan Rijgersma, of St. Martin's, W. I.; Prof. Oliver W. Holmes, of Boston.

On favorable report of the Committees, the following papers were ordered to be published:

Notice of some American LEECHES.

BY JOSEPH LEIDY, M. D.

Having been invited by Mr. R. H. Lamborn, Secretary and Treasurer of the Mississippi and Lake Superior Railroad Company, to join an excursion to Minnesota and Lake Superior, the last summer, during the trip I had the opportunity of making many interesting observations in natural history. The many lakes of Minnesota are rich in mollusca, annelides, &c. Among the annelides, besides an abundance of the ordinary American medicinal leech *Hirudo decora*, I noticed one which struck me from its general resemblance to a variety of the European medicinal leech, *H. medicinalis*. One of the gentlemen in company with us, Mr. Clark, allowed me to try upon him its disposition to bite, but I did not succeeed in getting the animal to do so. Upon examination of the leech, I find it belongs to a different genus from *Hirudo*, apparently to the genus *Aulastomum*. Its characters are as follows:

AULASTOMUM LACUSTRIS, n. s.

Body cylindroid, compressed, narrowing anteriorly, obtuse at the sides (in movement more cylindroid, or less flattened, and quite obtuse laterally compared with *Hirudo decora* in the same condition). Color throughout olive green, (with more of a yellowish hue than in the dorsal green of *H. decora*), closely maculated everywhere with confluent spots of a darker hue of the same color. Ninety-two annuli, exclusive of the lips, of uniform width, smooth. Upper lip half ovate, obtuse; lower lip narrow. Eyes ten; eight in the upper lip; the last pair separated by an annulus from the others. Mouth obliquely terminal, large. Acetabulum subbasilar, ventral, sessile, circular. Anus dorsal, above the acetabulum. Male aperture in the 24th annulus (but apparently between the 23d and 24th). Female aperture in the 29th annulus (apparently between 28th and 29th). Oesophagus capacious, extending to about the 22d annulus, with 12 folds. Jaws three, small, when at rest included in pouches formed by an eversion of the mucus membrane. Teeth 12 in number to each jaw, bilobed at base. Length 4 to 5 inches, breadth 5 lines posteriorly; acetabulum 2 lines in diameter.

Var. An individual of lighter olive green than the former had black maculæ replacing the dark green ones, which were also more distinct and fewer.

Specimens described from Twin Lake, Minnesota. In the summer of 1865 I saw several leeches at Saut St. Marie, in Lake Superior, which so far as I can remember were of the same species. At the edge of the shore I also saw some cocoons which I supposed to belong to the same animal. They were ochreous yellow, oval, about 4 or 5 lines in diameter; the surface impressed with concave pentagonal and hexagonal pits. From the angles of the margins of the latter projected branching processes curling at the ends.

Notwithstanding our familiarity with the American medicinal leech, its long and frequent employment in the medical profession, and the vast numbers which have been brought to notice, it has been so imperfectly described that, in the excellent Systema Helminthum of my late esteemed friend Dr. Diesing, of Vienna, it has been placed with the "Bdellidea species generc penitus dubiæ." I therefore take the present opportunity of indicating its characters more fully. It agrees most nearly with the diagnosis of the genus *Hirudo*, of